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10/766,477	01/29/2004	Motomi Kohno	31721-200490	3729

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VENABLE LLP
P.O. BOX 34385
WASHINGTON, DC 20043-9998

EXAMINER

HAGEMAN, MARK

ART UNIT	PAPER NUMBER
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3653

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/766,477

Applicant(s)

KOHNO, MOTOMI

Examiner

Mark Hageman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 2,6,7,9 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,8,10 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,872,973 to Ikebuchi et al. Ikebuchi discloses, a primary separation step of introducing raw grains containing the lightweight grains, which are to be separated, together with primary air into the cylindrical primary separation space in a direction to allow the raw grains to whirl upward in whirling motion along an inner wall surface of the cylindrical primary separation space (c2 lines 50+), so that most of the lightweight grains contained in the raw grains are guided to the exhaust port (4) by upwardly flowing airflow (c4 lines 5+) in the cylindrical primary separation space and the raw grains and part of the lightweight grains stay in a predetermined flow area by frictional resistance with respect to the inner wall surface generated by the whirling motion (c2 lines 55+) and then are dropped into the conical secondary separation space by their own weight (c2 lines 58+),

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a secondary separation step of blowing secondary air to a lower portion of the conical secondary separation space through a slit toward a beveled surface of a stabilizer (5 figure 2) provided centrally in the lower portion of the conical secondary separation space, and toward the raw grains dropping into the conical secondary separation space from the primary separation step so as to blow lightweight substances in the raw grains upward to the cylindrical primary separation space (19 and c4 lines 2+);

A tertiary separation step of blowing tertiary air upward from below the conical secondary separation space to blow remaining lightweight grain to the conical secondary separation space (18 figure 2 and C4 lines 2+); and

a discharging step of taking the raw grains with the lightweight grains removed continuously out from the unloading port at a lower portion of the conical secondary separation space (3 and c3 lines 38+).

-Re claim 3, Ikebuchi further discloses, a cylindrical section (20) having an exhaust port (4) at the upper portion thereof;

a conical section (1a) provided below the cylindrical section;

a raw grain feeding unit for feeding raw grains into the cylindrical section to whirl the raw grains upward along the inner periphery of the cylindrical section above the conical section (13 and c2 lines 50+);

a lightweight grain separating unit (1) for taking the lightweight grains in the raw grains out from the upper portion of the cylindrical section;

a secondary air blowing unit (19) for blowing the secondary air toward the raw

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grains being dropped from the cylindrical section upward at a lower portion of the conical section to move fine grains upward to the cylindrical section (c4 lines 2+) wherein the secondary air blowing unit blows a high-speed fresh secondary airflow into a chamber that surrounds a slit formed between a beveled surface of a stabilizer and a lower end of the conical section (figure 2); and

a tertiary air blowing unit (18), the tertiary air blowing unit blowing tertiary fresh air from below the conical section into a chamber bounded by the stabilizer and a unit for discharging (3) separated heavier material away from the stabilizer (figure 2).

-Re claim 5 Ikebuchi further discloses, a secondary air intake chamber (figure 2 lower portion) connected via a slit (figure 2 and c3 lines 62+) provided at the lower end of the conical section for taking compressed air therefrom (figure 2).

3. Claims 1, 3, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by US 3,667,600 to Oi et al. Oi discloses, a primary separation step of introducing raw grains containing the lightweight grains, which are to be separated, together with primary air into the cylindrical primary separation space in a direction to allow the raw grains to whirl upward in whirling motion along an inner wall surface of the cylindrical primary separation space (c2 lines 58+), so that most of the lightweight grains contained in the raw grains are guided to the exhaust port (21) by upwardly flowing airflow (c3 lines 8) in the cylindrical primary separation space and the raw grains and part of the lightweight grains stay in a predetermined flow area by frictional resistance with respect to the inner wall surface generated by the whirling motion and then are dropped into the conical secondary separation space by their own weight (c2 lines 65+).

a secondary separation step of blowing secondary air to a lower portion of the conical secondary separation space through a slit toward a beveled surface of a stabilizer (14, 15, 12) provided centrally in the lower portion of the conical secondary separation space, and toward the raw grains dropping into the conical secondary separation space from the primary separation step so as to blow lightweight substances in the raw grains upward to the cylindrical primary separation space (c3 lines 8+);

a tertiary separation step of blowing tertiary air upward from below the conical secondary separation space to blow remaining lightweight grain to the conical secondary separation space (3, 9, c3 lines 8+); and

a discharging step of taking the raw grains with the lightweight grains removed continuously out from the unloading port at a lower portion of the conical secondary separation space (11' and c2 lines 35+).

-Re claim 3, Oi further discloses, a cylindrical section (13, 18) having an exhaust port (21) at an upper portion thereof;

a conical section (11) provided below the cylindrical section;

a raw grain feeding unit for feeding raw grains into the cylindrical section to whirl the raw grains upward along an inner periphery of the cylindrical section above the conical section (6, 7 and c2 lines 26+);

a lightweight grain separating unit (figure 1 and abstract) for taking the lightweight grains in the raw grains out from the upper portion of the cylindrical section;

a secondary air blowing unit (5, 16) for blowing the secondary air toward the raw

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grains being dropped from the cylindrical section upward at a lower portion of the conical section to move the fine grains upward to the cylindrical section (c3 lines 8+) wherein the secondary air blowing unit blows a high-speed fresh secondary airflow into a chamber that surrounds a slit formed between a beveled surface of a stabilizer and a lower end of the conical section (figure 1) and

a tertiary air blowing unit (1, 3, 9), the tertiary air blowing unit blowing tertiary fresh air from below the conical section into a chamber bounded by the stabilizer and a unit for discharging (11') separated heavier material away from the stabilizer (figure 1).

-Re claim 5 Oi further discloses, a secondary air intake chamber (figure 1) connected via a slit (16) provided at the lower end of the conical section for taking compressed air therefrom (c2 lines 45+).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikebuchi in view of Hiroshi. Ikebuchi discloses all the limitations of the claim except the raw grain feeding unit is an upwardly oriented tangent induction pipe opening on an inner wall surface of the cylindrical section or an induction unit with a spinner disposed at a center

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of the a lower portion of the cylindrical section. Hiroshi discloses the raw grain feeding unit is an upwardly oriented tangent induction pipe (10) opening on an inner wall surface of the cylindrical section or an induction unit with a spinner disposed at a center of the a lower portion of the cylindrical section for the purpose of introducing air and material in an upward tangential direction.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have modified Ikebuchi to include the raw grain feeding unit is an upwardly oriented tangent induction pipe opening on an inner wall surface of the cylindrical section or an induction unit with a spinner disposed at a center of the a lower portion of the cylindrical section, as taught by Hiroshi, for the purpose of introducing air and material in an upward tangential direction.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oi in view of Hiroshi. Oi discloses all the limitations of the claim except the raw grain feeding unit is an upwardly oriented tangent induction pipe opening on an inner wall surface of the cylindrical section or an induction unit with a spinner disposed at a center of the a lower portion of the cylindrical section. Hiroshi discloses the raw grain feeding unit is an upwardly oriented tangent induction pipe (10) opening on an inner wall surface of the cylindrical section or an induction unit with a spinner disposed at a center of the a lower portion of the cylindrical section for the purpose of introducing air and material in an upward tangential direction.

It would have been obvious to one of ordinary skill in the art at the time of the

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applicant's invention to have modified Oi to include the raw grain feeding unit is an upwardly oriented tangent induction pipe opening on an inner wall surface of the cylindrical section or an induction unit with a spinner disposed at a center of the a lower portion of the cylindrical section, as taught by Hiroshi, for the purpose of introducing air and material in an upward tangential direction.

7. Claims 8, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikebuchi in view of US 4,776,950 to Green et al. Regarding claims 8 and 10 Ikebuchi discloses all the limitations of the claim except the exhaust pipe opening in the direction opposite to the whirling direction. Green discloses the exhaust pipe opening in the direction opposite to the whirling direction (18 figure 2) for the purpose of improving the classification efficiency (c1 lines 26+).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Ikebuchi to include the exhaust pipe opening in the direction opposite to the whirling direction, as taught by Green, for the purpose of improving the classification efficiency.

-Re claim 12 Ikebuchi further discloses, the secondary air blowing unit blows a high-speed secondary airflow through the slit toward a stabilizer (5) provided at a lower end of the conical section (figure 2).

8. Claims 8, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oi in view of US 4,776,950 to Green et al. Regarding claims 8 and 10 Oi discloses

all the limitations of the claim except the exhaust pipe opening in the direction opposite to the whirling direction. Green discloses the exhaust pipe opening in the direction opposite to the whirling direction (18 figure 2) for the purpose of improving the classification efficiency (c1 lines 26+).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Oi to include the exhaust pipe opening in the direction opposite to the whirling direction, as taught by Green, for the purpose of improving the classification efficiency.

-Re claim 12 Oi further discloses, the secondary air blowing unit blows a high-speed secondary airflow through the slit (16) toward a stabilizer (12, 14) provided at the lower end of the conical section (figure 1).

Response to Arguments

9. Applicant's arguments filed 12-27-2006 have been fully considered but they are not persuasive. Applicant stated that neither Ikebuchi nor Oi show tertiary air being blown upward from below the conical secondary separation space. Examiner disagrees and maintains that both references show tertiary air being blown upward from below the conical secondary separation space. Ikebuchi shows air being introduced into the conical secondary separation space and causing an upward flow (arrows figure 2). Examiner contends that this air is from below a substantial portion of the conical secondary separation space and that the claim language does not require the inlet to be outside of the conical secondary separation space. The same logic also applies to air

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introduced through inlet 9 in figure 1 of Oi. Furthermore the air source (1) in Oi is shown to be entirely below the conical secondary separation space and therefore there is air which is blowing upward at one point time is moving in a space entirely below the conical secondary separation space.

Applicant further stated that neither Ikebuchi nor Oi show "a stabilizer provided centrally in the lower portion of the conical secondary separation space." Examiner disagrees and maintains that Ikebuchi and Oi both show a stabilizer provided centrally in the lower portion of the conical secondary separation space. The fact that the cited reference characters are referred to as a "conic" or a "conical guide means" does not mean that they can not be considered stabilizers. Examiner considers the cited elements to be a stabilizer as defined by the specification and claims. Examiner contends that there is no language in applicant's claim or specification that would exclude the cited features from being considered "a stabilizer."

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Hageman whose telephone number is (571) 272-3027. The examiner can normally be reached on M-F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Mackey can be reached on (571) 272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MCH


PATRICK MACKEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600